

AUXILIARY FOLDING DEVICE FOR A TREADMILL

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates to an auxiliary folding device, and
5 more particularly to an auxiliary folding device for a treadmill.

2. Description of Related Art

For reducing the volume of a treadmill when being stored, most
of the treadmills are designed to be foldable. In folding the treadmill, a
platform of the treadmill is upward turned toward the stand of the
10 treadmill. For easily folding the treadmill and holding the turned
platform in place, an air cylinder is mounted on a first side of the
treadmill for easily lifting the platform and a locking device mounted
on a second side of the treadmill for holding the turned platform in
place.

15 However, the air cylinder is mounted on one side of the
treadmill and the other side of the treadmill is locked by the locking
device such that the air cylinder may be over loaded. The air cylinder
may be broken when loading all the gravity of the treadmill for a long
time. To mount two air cylinders to two opposite sides of the treadmill
20 may solve the above problem. However, two air cylinders may greatly
increase the manufacturing cost of the treadmill.

Another conventional auxiliary folding device for a treadmill in
accordance with the prior art shown in Fig. 6 is mounted between a
main frame (6) and a platform (7) of the treadmill for easily lifting the

platform (7) toward the main frame (6). The base frame (6) has two arms (61) respectively upwardly extending from two opposite sides of the main frame (6) and the platform (7) is pivotally mounted to the main frame (6) between the two arms (61) of the main frame (6). The
5 auxiliary device (8) includes a telescope rod (81) mounted on a first side of the treadmill and an air cylinder (82) mounted on a second side of the treadmill for easily lifting the platform of the treadmill. A locking pin (811) extends through the telescope rod (81) to lock the telescope rod (81) when the telescope rod (81) extends to a suitable
10 length.

However, the telescope rod (81) is mounted on one side of the treadmill and locked after expanding, and the air cylinder (82) is mounted on the other side of the treadmill such that the above problem of over load of the air cylinder has not solved. As shown in Fig. 6, the
15 telescope rod (81) and the air cylinder (82) are respectively mounted on two opposite side of the treadmill such that the manufacturing processes of mounting the auxiliary device (8) to the treadmill are complicated. Furthermore, the dust and a crash may shorten the using life of the air cylinder (82) because an inner rod (not numbered) of the
20 air cylinder is exposed in the air after extending to lift the platform (7).

SUMMARY OF THE INVENTION

The main objective of the present invention is to provide an improved auxiliary folding device for a treadmill that the user can fold the treadmill in a labor-saving way.

To achieve the objective, the auxiliary folding device is mounted between a main frame and the platform of the treadmill. The platform is pivotally connected to the main frame. The auxiliary folding device includes an air cylinder having opposite ends
5 respectively pivotally connected to the main frame and the platform. The air cylinder extends when the user folds the platform toward the main frame for user to fold the treadmill in a labor-saving way.

BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is a perspective schematic view of an auxiliary folding
10 device for a treadmill in accordance with the present invention;

Fig. 2 is an exploded perspective view of the auxiliary folding device for a treadmill in Fig. 1;

Fig. 3 is a side cross sectional view of the auxiliary folding device for a treadmill if Fig. 1;

15 Fig. 4 is a partially side cross sectional view of the auxiliary folding device for a treadmill in Fig. 3;

Fig. 5 is a partially side cross sectional view of the auxiliary folding device for a treadmill in Fig. 3; and

Fig. 6 is a perspective schematic view of a conventional
20 auxiliary folding device for a treadmill in accordance with the prior art.

DETAILED DESCRIPTION OF THE INVENTION

Referring to the drawings and initially to Figs. 1-3, an auxiliary folding device (3) for a treadmill in accordance with the present invention is adapted to be mounted between a main frame (1) and a

platform (2) of the treadmill. The main frame (1) includes a first post (11) and a second post (12) opposite to each other. A first connecting rod (14) is provided to connect the first post and the second post (12) to form a U-shape. A first pivot seat (15) centrally extends from the first
5 connecting rod (14) and a rack (13) upwardly extends from the main frame (1) opposite to the first connecting rod (14). The platform (2) is pivotally connected to the main frame (1) between the first post (11) and the second post (12). The platform (2) includes a second connecting rod (22) transversely secured on a bottom of the platform
10 (2), and a second pivot seat (23) extending from the second connecting rod (22) and corresponding to the first pivot seat (15).

The auxiliary folding device (3) has two opposite ends respectively pivotally connected to the first pivot seat (15) and the second pivot seat (23). The auxiliary folding device (3) includes a first
15 post (31) pivotally connected to the first pivot seat (15), a second post (32) received in the first post (31) and a locking device (33) mounted on an outer periphery of the first post (31).

A spreading post (311) is movably received in the first post (31) between the first post (31) and the second post (32). The spreading post
20 (311) is capable to longitudinally extend from the first post (31). The second post (32) has a spreading rod (321) movably received therein. The spreading rod (321) is capable to longitudinally extend from the second post (32). The spreading post (311) is moved with the spreading rod (321). In the preferred embodiment of the present invention, the

second post (32) is an air cylinder and the spreading rod (321) is the piston of the air cylinder.

The first post (31) has a first pivot hole (312) defined in a first end of the first post (31) and diametrically extending through the first post (31). The second post (32) has a first ear (322) extending from a first end of the second post (32) and corresponding to the first pivot hole (311). A first pin (not numbered) extends through the first pivot hole (312), the first ear (322) and the first pivot seat (15) such that the first post (31) and the second post (32) are pivotally connected to the first pivot seat (15). The spreading post (311) has a second pivot hole (313) defined in one end of the spreading post (311) opposite to the first pivot hole (312) and extending through the spreading post (311). The spreading rod (321) has a second ear (323) extending therefrom opposite to the first ear (322) and corresponding to the second pivot hole (313). A second pin (not numbered) extends through the second pivot seat (23), the second pivot hole (313) and the second ear (323) such that the spreading post (311) and the spreading rod (321) are pivotally connected to the second pivot seat (23).

The first post (31) has a pair of ears (314) laterally extending from an outer periphery of the first post (31) and the locking device (33) is pivotally mounted to the pair of ears (314). A stub (331) extending from the locking device (33) and is selectively inserted into the first post (31) and the spreading post (311) to hold the spreading post (311) and the spreading rod (321) in place after spreading. A resilient

member (332) is mounted between the locking device (33) and the first post (31) to provide a restitution force to the locking device (33) when the stub (331) is detached from the spreading post (311) and the first post (31). In the preferred embodiment of the present invention, the resilient member (332) is a torsion spring. A hole (315) is defined in the first post (31) to allow the stub (331) inserted in to the first post (31) and the spreading post (311) has a bore (3111) defined to allow the stub (331) inserted into the spreading post (311).

The spreading post (311) in the first post (31) and the spreading post (321) in the second post (32) extend when the platform (2) is moved toward the main frame (1) for user to easily fold the treadmill. With reference to Fig. 4, the stub (331) is inserted into the hole (315) and the bore (3111) due to the restitution force of the resilient member (332) for holding the spreading post (311) in place when the spreading post (311) longitudinally spreads from the first post (31) and the bore (3111) communicates with the hole (315) in the first post (31). With reference to Fig. 5, the spreading rod (311) is freely moved in the first post (31) and the spreading rod (321) is freely moved in the second post (32) when the locking device (33) is wrenched toward the first post (31) and the stub (331) is escaped from the bore (3111) and the hole (315). Consequently, the platform (2) can be easily downward moved to the supporting surface for user to exercise thereon.

The first pivot hole (312) in the first post (31) and the first ear (322) of the second post (32) are pivotally mounted to each other, and

the second pivot hole (313) in the spreading post (311) and the second ear (323) of the spreading rod (321) are pivotally mounted to each other. Consequently, all the gravity of the platform (2) is loaded by first post (31), and the second post (32) and the spreading rod (321) are in a free condition to prevent the second post (32) from being broken after loading the gravity of the platform for a long time when the treadmill finishing folding. Furthermore, the first post (31) is centrally pivotally connected to the main frame (1) such that the first post (31) can provide a steadier support than that provided by the conventional telescope rod, which is mounted on one side of the main frame.

The second post (32) and the spreading rod (321) are respectively and movably received in the first post (31) and the spreading post (311). Consequently, the first post (31) and the spreading post (311) can prevent the using life of the second post and the spreading rod (321) from being shortened due to dust or a sudden crash.